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ABSTRACT

This paper discusses the challenges that the digital age poses for recordkeeping and the National Archives of Australia's response to these challenges. The Archive's development of inter-dependent standards, policies, and guidelines for government recordkeeping is summarized. An initiative for developing and promoting resource discovery metadata and recordkeeping metadata that resulted in the Australian Government Locator Service (AGLS) metadata standard is described. The set of 19 AGLS resource discovery elements are listed according to their descriptive purpose, including four AGLS elements (function, availability, mandate, and audience) that were added to the basic elements of Dublin Core. An overview is presented of the Australian Governments Interactive Functions Thesaurus (AGIFT), recommended for use when creating AGLS metadata. The purposes of recordkeeping metadata are summarized, and the relationship between the eight mandatory elements of the recordkeeping metadata standard (agent, rights management, title, date, aggregation level, record identifier, management history, and disposal) and the elements of the AGLS standard are shown. Finally, a systematic approach to the effective management of World Wide Web-based records is highlighted. (Contains 15 references.) (MES)

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# Enabling Best Practice Recordkeeping in the Digital Age

By:
**Anne Robertson**

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# Proceedings

## *Enabling Best Practice Recordkeeping in the Digital Age*

***Anne Robertson***

Thank you for the opportunity to talk with you this morning about the challenges that the digital age poses for recordkeeping and the National Archives of Australia's response to these challenges.

Most of you would be familiar with the Archives as the custodian of the significant records of the Commonwealth Government. The records in our collection trace the events and decisions that have shaped our nation over the past one hundred years. We hold the papers of Governors-General, Prime Ministers and Ministers. We have Cabinet documents, Royal Commission files and departmental records on defence, immigration, naturalisation, security, intelligence and many other issues involving the federal government. Each year thousands of people use the collection to undertake research. They include academics, genealogists, local historians, journalists, students, professional historians and lawyers.

The *Archives Act 1983* requires Commonwealth Government departments and agencies to transfer records that have significant and enduring value to the National Archives so that the public can have access to them. The Act provides for access to any Commonwealth records that are more than 30 years old (subject to certain exemptions).

As you would appreciate the vast majority of records currently in our collection are paper files that predate the digital age. But how are we to ensure that the significant activities and decisions that the Commonwealth government is undertaking today, more often than not conducted and stored electronically, will survive or be accessible to the public thirty years from now? If we don't think about these issues now there will be a yawning gap in Australia's federal record.

In 1998 the Australian Law Reform Commission described the state of recordkeeping in the Commonwealth as 'unregulated' and 'parlous'[i]. Indeed, over the past five years more than half the reports issued by the Australian National Audit Office have commented adversely on the quality of recordkeeping in government agencies.[ii]

This situation has been brought about by a variety of factors including changes in public service career paths and structures, 'multi-skilling', 'outsourcing', and the devolution of managerial responsibility. All of these trends have contributed to a loss of basic recordkeeping skills, procedures and systems and a greatly reduced awareness of the importance of good recordkeeping in the culture of the public service.

So what has been the legacy of this cultural shift?

The introduction of personal computers, networked office environments and new work practices combined with the demise of the Public Service Board, which used to issue recordkeeping guidelines and manuals to government agencies, has created a vacuum. Even when agencies know that they should be doing a better job managing corporate information they do not know where to turn for appropriate advice.

Some years ago the National Archives decided that it had to take steps to fill this vacuum. It made a strategic decision to broaden the scope of its activities to become a standards and policy setter in the area of government recordkeeping, and more particularly, to address the challenges of recordkeeping in the digital age. We recognised that unless we got in at the start and helped agencies understand what records to create, how to create them and how to manage them over time there would be huge deficiencies in government accountability as well as a gap in the federal chronicle that we leave the next generation.

The Archives strategy has been to work in partnership with agencies to ensure good recordkeeping in support of efficient and accountable government. We set about producing the tools that agencies could use to tackle the problem.

This work culminated in March this year with the release of a comprehensive suite of inter-dependent standards, policies and guidelines developed and published by the Archives on its website under the 'E-permanence' logo.[iii] Essentially, we want to work towards having government records, and especially electronic records, that are as reliable and durable as if they had been carved in stone.

The basis of this new approach to recordkeeping is quite simple - recordkeeping should be managed systematically and never allowed to 'just happen'. It is based on AS4390 - the Australian Standard on Records Management - issued as a voluntary code of best practice by Standards Australia in 1996.[iv] AS4390 was developed by representatives from public sector, corporate and academic institutions and is the first national standard on records management to be adopted anywhere in the world. And I am pleased to say that it is now in the process of being adapted as an International Standard.

Having given you a little background on the state of recordkeeping in the Commonwealth and the Archives response to it I'd now like to move on and talk about a couple of our standard setting initiatives designed to help agencies manage their digital information, including that subset that constitute federal records.

The first of these initiatives concerns metadata.

Metadata is often defined as 'data about data'. A more helpful definition might be 'structured information that describes and/or allows us to find, manage, control, understand or preserve other information over time'.[v]

Of course metadata is simply a new term for the type of information that archivists, records managers and librarians have always collected to describe and control records and other information resources. Applying this new jargon, a traditional paper file is a 'metadata encapsulated object'. The file contains records and the file cover captures information about those records - what they are about, who used them, when they were used, what access restrictions apply to them and so on. In short, their context.

There are two types of metadata that the National Archives has become actively involved in developing and promoting - resource discovery metadata and recordkeeping metadata. Recordkeeping is of course the Archives core business. But people often express surprise when they learn that the Archives has adopted a standards setting role in the online resource discovery area, as this is a field that is very often dominated by librarians rather than archivists. The Archives made a deliberate decision to play a leading role in this area for the following reasons. Firstly, government business is increasingly being conducted online and it is our job to ensure that adequate records, including adequate metadata of such transactions, are created. Secondly, with the trend towards making government information available online, it is certain that much of this information will also exist as records of one sort or another. If we are developing a recordkeeping metadata standard for government it makes no sense for there to be a totally separate and unrelated metadata regime for online resource description. As far as possible government should have an efficient, integrated metadata regime, and this may be difficult to ensure if different agencies are responsible for different, though related, government metadata standards.

As far back as 1996 the National Archives was urging the government to give it the go-ahead to develop a resource discovery metadata standard that would help improve the visibility and accessibility of government information and services online.[vi] Our view was that success in this area could have spin-off benefits for some of the less visible areas of need (such as recordkeeping) by adding legitimacy and momentum to the Archives' policy initiatives. I am pleased to say that this is proving the case.

On 6 April this year, just a week after the launch of the Archives 'E-permanence' campaign, the government announced its *Online Strategy*.[vii] In relation to web-based publishing and service delivery, the strategy requires all government agencies to comply with metadata and recordkeeping standards issued by the National Archives. With respect to metadata, the standard identified in the strategy is the Australian Government Locator Service (or AGLS) metadata standard.

AGLS is intended to standardise web-based resource descriptions and thereby help government search engines accurately and efficiently identify and retrieve web-based resources in response to public queries. The National Archives convenes a cross-jurisdictional expert group, the AGLS Working Group, which advises and assists it to develop and deploy the standard.[viii] The AGLS standard has now been endorsed by all Australian governments at Federal, State and Territory level. It is also attracting considerable interest in other national jurisdictions, most notably New Zealand, Canada and Great Britain.

The AGLS standard is based on the Dublin Core resource discovery metadata standard, but extends that standard with the addition of four new descriptive elements and a number of new sub-elements or 'qualifiers'. These extensions reflect the particular requirements of Australian governments for precise online resource discovery. The four AGLS elements that have been added to the basic 15 elements of Dublin Core are:

- function - that describes the function/s of government to which the resource relates;
- availability - that provides information on how offline resources may be obtained;
- mandate- that refers to the legislative or regulatory basis for the resource; and
- audience - that describes the target audience for the resource.

The set of 19 AGLS elements are listed below according to their descriptive purpose:

- ownership and creators of the resource - creator, publisher, contributor, rights
- intellectual content about the resource - title, subject*, description, source, language, relation, coverage, function*, audience, mandate
- electronic or physical manifestation of the resource - date, type, format, identifier**, availability**[ix]

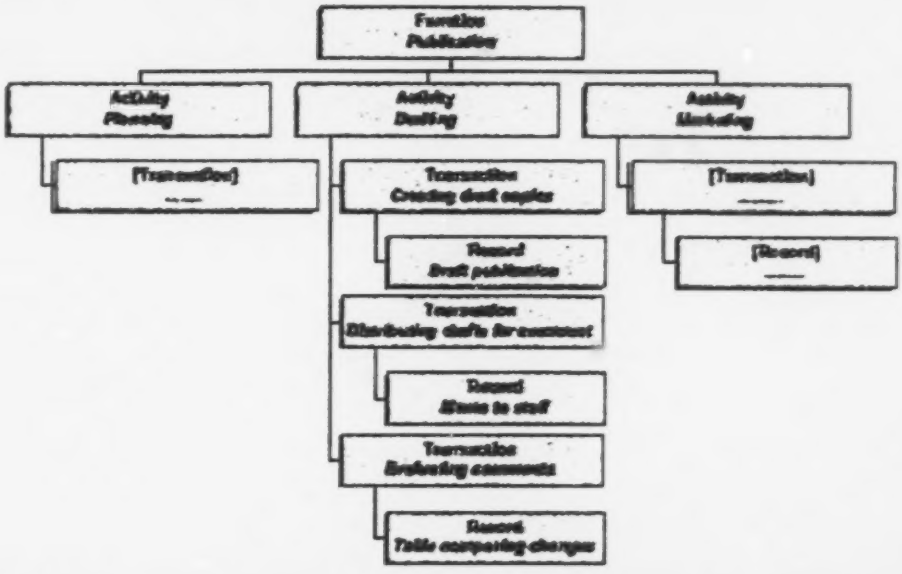
AGLS is designed to be simple, flexible and dynamic in its application. Only six of the 19 elements are mandatory (and these are underlined in the aforementioned list). AGLS metadata can be applied at the point at which an object is created or published online, and it can also be added to and improved as the particular resource evolves or changes over time. It can be used to describe single items or logical aggregations of resources. In addition, agencies can choose how much structure they wish to deploy in their metadata - they can choose to create simple, unqualified descriptions or they can create much richer descriptions using a range of different elements and qualifiers.[x]

The Archives has published a user manual and application guidelines to help agencies understand and implement the AGLS standard.

The inclusion of the 'function' element is one of the more significant features of the AGLS standard. This element establishes a robust link between the world of online resource discovery and the world of recordkeeping. Since the publication of the Australian Standard on Records Management the Archives has been recommending to agencies that they classify all their records by function and activity.

'Functions' represent the major responsibilities that are managed by an agency to fulfil its goals. 'Activities' are the major tasks performed by the agency to achieve its functions. There are often a number of activities associated with any one function. Each of these activities may involve one or more tasks or 'transactions'. 'Records' are often generated as a by-product and evidence of these transactions.

By way of example, 'publication' is a common administrative function across government. Drafting, marketing, planning and tendering are some of the activities performed as part of the publication function. The process of drafting publications, for example, may involve creating draft copies, distributing drafts for comment, receiving comments on drafts, evaluating comments and so on. Each of these tasks or transactions may generate records.



By looking at their business this way, government agencies can better understand the context in which records are generated. They can then allocate an appropriate level of resources to manage their records according to the strategic significance they pose to the organisation.

As part of the E-permanence campaign the National Archives is encouraging all agencies to analyse their functions and activities and use this as an intellectual framework to develop a corporate thesaurus for file titling and retrieval purposes, indeed, for controlling all corporate information resources.

From a government resource discovery point of view business activities or 'functions' are also a useful means of resource classification. While there are a wide variety of different subject thesauruses in use in government, thus making it impossible to achieve national consistency in online resource classification, there is only one comprehensive national functions thesaurus that is recommended for use when creating AGLS metadata.

This thesaurus, the Australian Governments Interactive Functions Thesaurus (or AGIFT), is a high-level thesaurus that covers the functions performed by all three tiers of government in Australia.[xi] It was developed by the National Archives in consultation with representatives from Commonwealth, State, Territory and local government, academics, information professionals and information managers from individual agencies.

AGIFT aims to help people searching government websites to retrieve relevant results by linking natural language terms with their bureaucratic equivalents. It enables people to find information about familiar subjects without needing to know or understand the functional structure of government. For example, search engines deploying the AGIFT thesaurus enable a user interested in government information on 'kindergartens' to retrieve information that has been classified according to the government term 'early childhood education'. At present the thesaurus supports plain English searching of some 300,000 terms and equates these to 26 over-arching terms that cover the functions of all three levels of government and a further 500 or so narrower and related



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terms that describe these broad functions in more detail.

The basic message that the Archives aims to promote is that if government agencies have gone to the effort of publishing information or providing services via the Web, then it is worth linking those resources to some AGLS metadata and using functional terms that can be searched via AGIFT to help ensure that people can find them.[xii]

Apart from the AGLS metadata standard for resource discovery, the Archives has also developed a metadata standard for recordkeeping. Like resource discovery metadata recordkeeping metadata helps describe and locate information. But more importantly, it helps control and manage information in a way that preserves its integrity and authenticity and enables it to serve as evidence of business activity over time. Such evidence is essential for legal and public accountability purposes.

Recordkeeping metadata is designed to:

- uniquely identify records;
- authenticate records;
- document and preserve their content, context and structure over time;
- administer conditions of access and disposal;
- track the history of their use and management;
- facilitate the transfer or migration of electronic records between IT systems;
- restrict unauthorised use; and
- help users find and understand records.

As I mentioned earlier, this type of metadata is not new. What is new is the need for information professionals - records managers, archivists, IT specialists, data administrators and the like - to work together to ensure that the electronic systems we use to conduct our daily business have the capacity to create and capture this metadata. Unless electronic records are created and managed properly in well-designed systems that can guarantee their reliability, durability and accessibility, archivists are not going to have many records that they can preserve for long-term use or that will be worth preserving for long-term use. Nor will organisations have the type of records that are essential for the efficient, effective and accountable conduct of their business.

The National Archives published its *Recordkeeping Metadata Standard for Commonwealth Agencies* in April 1999.[xiii] Like the other initiatives I have mentioned this standard was developed collaboratively - with software vendors, academics, government agencies and other experts. Its aim is to define the metadata that government agencies should capture in their corporate information systems so that these systems satisfy their needs for evidence over time. The National Archives recordkeeping metadata standard consists of 20 descriptive elements, eight of which are mandatory, and a further 65 'sub-elements' or qualifiers that add richness to the 20 main elements.

In developing the *Recordkeeping Metadata Standard*, the Archives was determined to maximise the overlap between it and the AGLS metadata standard. It recognised that a high proportion of resources that should be described using AGLS metadata would be records that are moved from a corporate recordkeeping environment into a web environment, or indeed records that exist simultaneously in both environments. Because both resource discovery metadata and recordkeeping metadata help people find resources in a networked environment, they have a lot in common. Of course, recordkeeping metadata aims to do a lot of other things as well. As such, the Archives view has been that resource discovery metadata should be regarded as a subset of recordkeeping metadata. Under this unified regime, agencies need only create metadata once but can use it many times for different purposes, including records management and web-based information dissemination.

By way of example, the table below illustrates the relationship between the eight mandatory

elements of the *Recordkeeping Metadata Standard* and elements of the AGLS standard. As you can see five of the six mandatory AGLS elements (underlined) correspond with the recordkeeping elements:

- agent = creator, publisher, other contributor
- rights management = rights
- title = title
- date = date
- aggregation level = type (aggregation level qualifier)
- record identifier = identifier
- management history = date (part only)
- disposal = [not applicable]

Having developed and issued these inter-related metadata standards the major challenge now is to work with government agencies and the software vendor community to encourage their adoption and deployment, and, as far as possible, to find ways to automate their creation and management. This will require ongoing effort which in turn will necessitate regular reviews and revisions to the standards as we learn more about their practical application. As with any standard, our metadata standards have to continue to evolve to remain relevant and useful.

Nevertheless, we are confident that the Commonwealth government now has a solid foundation of metadata standards upon which efficient and effective regimes for recordkeeping and online service delivery can be built.

Apart from its promotion of metadata standards, the Government's *Online Strategy* also requires agencies to make and keep records that accurately document their public websites over time to satisfy business and accountability requirements and community expectations.

Essentially this is nothing new - under the *Archives Act* Commonwealth agencies have legal obligations regarding the retention and disposal of Commonwealth records. Nonetheless, the dynamic nature of online activities presents special challenges.

The first challenge is to recognise that websites are a form of publication (and are therefore records for archival purposes) and that websites may also generate records, particularly if they provide an interface for the provision of goods and services through the use of e-commerce.

The second challenge is to decide what records agencies need to make of their web-based activities, when to make them, how to make them and how to keep them so that they remain accessible and meaningful as long as they are required.

The Archives has developed a policy paper and guidelines to help agencies address these challenges. The policy paper is available on our website while the companion guidelines are in the final stages of drafting and are expected to be published by the end of the year.[xiv]

Unfortunately we cannot offer agencies easy solutions to meet their recordkeeping responsibilities in the online environment.

Websites today come in many different forms. These range from simple collections of static pages which display the same information to all visitors, through to pages that are created and displayed dynamically in response to specific queries. In addition many websites now do something - they enable visitor details to be captured, online orders to be taken, and personalised information to be displayed based on user profiles. The nature of an agency's site will influence its recordkeeping requirements. The technology that supports websites is also changing rapidly and the hardware and software that an agency uses today to make a record of its site may not be compatible with the tools it relies on tomorrow to access that record.

In the Archives view, the effective management of web-based records relies on a systematic

approach that is generally applicable to all records, regardless of format. This approach is based on AS4390, the *Australian Standard on Records Management.*

- firstly, agencies should actively take responsibility for recordkeeping;
- secondly, recordkeeping should be based on a thorough understanding of the specific functions and activities performed by an agency and an understanding of the wider socio-political environment in which it operates;
- thirdly, recordkeeping should be based on a systematic analysis of an agency's need to make and keep records relating to those functions; and
- lastly, agencies should establish business systems and manage records in accordance with these identified needs.

The methodology that we advocate to work through these generic recordkeeping issues is set out in more detail in *Designing and Implementing Recordkeeping Systems: a Manual for Commonwealth Agencies*, fondly known by the acronym DIRKS. It represents the backbone of the Archive's new approach to recordkeeping and is available on the Archives website.[xv]

Using DIRKS in conjunction with the forthcoming *Archiving Websites Guidelines* will help agencies:

- promulgate a policy on making and keeping web-based records;
- assign and document specific responsibilities for recordkeeping practitioners, web administrators and IT staff;
- determine what records the agency must create to satisfy business needs, broader accountability requirements and community expectations and assess and quantify the business risks of not maintaining full accountability of their actions;
- assess technological options for creating web-based records that retain the format and functionality that give them meaning; and
- explore storage and preservation issues to ensure that records of web activities remain accessible over time in accordance with identified requirements.

The Archives cannot answer these questions for agencies. We can provide advice on the steps that agencies should take to address these issues and we can discuss the emerging technological options that may satisfy archival requirements. But ultimately agencies will need to establish partnerships between their recordkeeping professionals, IT staff such as network managers or data administrators, web administrators, and corporate governance personnel such as auditors to work through these issues and develop solutions most appropriate to their business needs and broader accountabilities.

In closing, I hope that this brief presentation has given you an understanding of the Archives role in ensuring that present and future generations have proper access to the services and records of government in the online era. Our intention has been to develop a range of interrelated standards, policies and guidelines that provide government agencies with the intellectual framework to manage their information resources, including their federal records, in an integrated way.

The proof of our success will be the existence of durable, meaningful and accessible electronic records in the years to come.

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## Footnotes

**i** Australian Law Reform Commission, *Australia's Federal Record: A Review of the Archives Act 1983*, Sydney, 1998, p. 27.

**ii** Australian National Audit Office reports can be found at http://www.anao.gov.au/

**iii** The E-Permanence website can be found at http://www.naa.gov.au/recordkeeping/

**iv** Standards Australia, *Records Management AS 4390*, Homebush, 1996. This standard forms the basis of the draft international records management standard, ISO 15489.

**v** Coined by Adrian Cunningham in 'Six degrees of separation: Australian metadata initiatives and their relationships with international standards' delivered to the Netherlands Institute for Archival Education and Research in June 2000.

**vi** Information Management Steering Committee, *Management of Government Information as a National Strategic Resource; Report on Information Management in the Commonwealth Government*, Canberra, 1996, pp. 242-245. Available at http://www.dcita.gov.au/ogo/imsc/imscrept.htm

**vii** The website for the Government Online Strategy can be found at http://www.govonline.gov.au/

**viii** The Australian Government Locator Service home page can be found at http://www.naa.gov.au/recordkeeping/gov_online/agls/summary.html

**ix** * and ** denotes alternative mandatory elements

**x** The AGLS standard is defined in the *Australian Government Locator Service Manual for Users*, available at http://www.naa.gov.au/recordkeeping/gov_online/agls/user_manual/intro.html; while practical advice on applying the standard can be found in *Applying the Australian Government Locator Service (AGLS) Metadata Standard in Commonwealth Agencies*, Version 1.0, August 2000, available at http://www.naa.gov.au/recordkeeping/gov_online/agls/guidelines/intro.html

**xi** Information about the Australian Governments Interactive Functions Thesaurus can be found at http://www.naa.gov.au/recordkeeping/gov_online/agift/summary.html

**xii** Of the 116 agencies that provided authorised responses to OGO's first reporting round in July 2000 70% expect to have obtained National Archives accreditation to use the AGLS logo on their websites by 31 December 2000. 85% expect to have approval by 31 December 2001. See Office for Government Online, *Government Online Round One Survey Results*, September 2000 available at http://www.govonline.gov.au/projects/strategy/GovernmentOnlineSurvey.htm

**xiii** National Archives of Australia, *Recordkeeping Metadata Standard for Commonwealth Agencies* Version 1.0, May 1999. Available at: http://www.naa.gov.au/recordkeeping/control/rkms/summary.htm

**xiv** National Archives of Australia, *Archiving Websites: A policy for keeping web-based records in the Commonwealth Government*, March 2000 is available on our website at http://www.naa.gov.au/recordkeeping/er/web_records/intro.html

**xv** *Designing and Implementing Recordkeeping Systems: Manual for Commonwealth Agencies*, which was jointly developed by the National Archives of Australia and the State Records Authority of New South Wales, and published as an exposure draft in February 2000 can be found at http://www.naa.gov.au/recordkeeping/dirks/summary.html

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